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DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
WASHINGTON

Letter
Circular
LC 213

(December 21, 1926)

Information Section
Bureau of Standards, Washington

NEW FEES AND NEW TESTS FOR STANDARD WEIGHTS

On January 1, 1927, new schedules of fees will be put into effect for all classes of standard weights tested by this Bureau.

In these schedules not only are the fees changed in amount but the method of computation has been put upon a new basis, one new class of weights has been added, a humidity test is now introduced in respect to Class S weights, and lower precision tests have been provided for in the case of weights of Classes M and S. It is considered that as a result the fees have been made more equitable in that they more clearly reflect the amount of time and effort expended in the various tests, and the tests obtainable are more flexible than formerly.

The main modifications are as follows:

There has been introduced a fixed or minimum fee for handling, inspection, etc., which will be assessed in all cases, whether or not the weights are rejected on inspection. To this is to be added a fee per weight for the routine weighing and computing needed in determining the accuracy, whenever this work has been done. Therefore, when weights have been given the regular test for accuracy, the full fee must be charged, as heretofore, whether the weights can be certified or not.

For laboratory reference sets, both lacquered and plated weights of the common screw-knob type have frequently been found unreliable, even for work that does not require extreme precision. To provide for reliable standards for work of moderately high precision without the great expense and labor of the high precision test under Class M, there is provided a "moderate precision test" under Class M. Weights submitted for this test must be strictly one-piece weights, conforming to all the requirements of Class M, and they will be given the same inspection - plated weights will be boiled, etc. - but the corrections will be certified only to the precision usual under Class S. Ordinarily in this test it will not be necessary to determine the volumes of any of the weights. An illustration of the fees for this test is given in Example 4.

In many lines of work for which high grade laboratory weights are used, a sufficient accuracy is guaranteed by knowing that the weights have errors less than the tolerances

specified for weights of Class S. Therefore, to reduce the cost of testing such weights, and also to save the time of the Bureau in testing them, there has been introduced a "tolerance test", as item g of Schedule 226. The fee for a typical set is shown in Example 6.

For similar reasons there is provision for testing a lower grade of laboratory weight, under the new Class, S2. The specifications for these weights will be approximately the same as for Class S. Until detailed specifications are published, the Class S specifications will apply, except that, when desired, aluminum or other suitable materials of low density may be used for weights up to 500 mg; and the tolerances will be five times those for Class S. An example of the fee for testing a typical set of these weights is shown in Example 7.

Some plated or lacquered screw knob laboratory weights have been found to suffer excessive changes in mass with ordinary changes in atmospheric humidity. Therefore such weights, submitted under Class S, will hereafter be given a test for such effect. This will be treated as part of the preliminary inspection, so that the fee for it is included as part of the fee given under item b, Schedule 226.

Class S weights that change with humidity by too much to warrant certifying corrections, may be given the tolerance test if the changes are not too great. Definite limits for these variations will be published later. If these changes are too great to warrant testing for tolerance, or if the weights fail in other ways to conform to the requirements for Class S, they may be tested under Class S-2 if satisfactory for that class. In all cases of such change in classification, the fee will depend on the work actually done, rather than on the nature of the final certificate or report.

Class A weights, when new, are always given the 3 months' constancy or "age" test. The fee for this is therefore included in the fee for the regular test of these weights.

Examples of Fees

Example 1

Highest Precision Commercial Standards: Class A

Set: New weights, 50 lb. to 1/16 oz.: 17 weights

Schedule	221c		$ 3.50
"	221d:	12 weights at $1.50	18.00
"	221e:	3 " at 2.00	6.00
"	221f:	2 " at 4.00	8.00
		Total fee	$35.50

Example 2

Precise Commercial Standards: Class B

Set: 50 lb. to 1/16 oz.: 17 weights

Schedule	223c		$ 1.50
"	223g:	12 weights at $0.30	3.60
"	223h:	3 " at 0.40	1.20
"	223i:	2 " at 0.70	1.40
		Total fee	$ 7.70

Example 3

Class M Standards of Mass; High Precision Test

Set: 100 g to 1 mg: 22 weights; larger weights plated

Schedule	225b		$ 2.00
"	225v:	9 weights at $1.50	13.50
"	225j:	22 " at 1.00	22.00
		Total fee	$37.50

With "age" constancy test

Schedule 225w:	22 weights at $1.00 (add)	22.00
	Total fee	$59.50

Example 4

Laboratory Reference Set, Class M; Moderate Precision Test

Set: 100 g to 1 mg: 22 weights; new, larger ones plated.

Schedule	225b		$ 2.00
"	225d:	22 weights at $0.75	16.50
		Total fee	$18.50

With "age" constancy test

Schedule 225w:	22 weights at $0.75 (add)	16.50
	Total fee	$35.00

Example 5

Class S Weights; Determination of Corrections

Set: 100 g to 1 mg: 22 weights; larger weights screw-knob, plated or lacquered

Schedule 226b		$ 3.00
" 226d: 22 weights at $0.75		16.50
	Total fee	$19.50

Example 6

High Grade Laboratory Weights, Class S; Tolerance Test

Set: 100 g to 1 mg: 22 weights; larger weights screw-knob, plated or lacquered

Schedule 226 b		$ 3.00
" 226 g: 22 weights at $0.40		8.80
	Total fee	$11.80

Example 7

Second Quality Analytical Set, Class S2

Set: 100 g to 1 mg: 22 weights

Schedule 227a		$ 1.00
" 227g: 22 weights at $0.30		6.60
	Total fee	$ 7.60

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 221.- "CLASS A" STANDARD WEIGHTS (NEW)

Effective January 1, 1927, superseding all previous schedules for the items covered.

Item	Description	Fee
221a	New Class A standards, or sets or groups containing such standards: for each set, or single weight, or group of weights that is submitted, tested, and certified or reported as a unit, when the largest weight of the set or group is not greater than 2 lb. or 1 kg - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	$2.00
221b	Same as 221a except that the largest weight is over 2 lb. or 1 kg but not over 20 lb. or 10 kg...	2.75
221c	Same as 221a except that the largest weight is over 20 lb. or 10 kg but not over 50 lb.or 25 kg..	3.50

Note: To the appropriate item above there will be added, in the case of a full regular test, an amount computed from one or more of the following items - the item or items used depending on the size of the weights.

For weights given the complete inspection, cleaning, etc., but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only the appropriate one of the items above.

221d	For each weight that is not over 2 lb. or 1 kg - testing for accuracy and constancy, sealing, and certifying or reporting of correction for each weight.....	4.50
221e	For each weight over 2 lb. or 1 kg, but not over 20 lb. or 10 kg - same as 221d.....	2.00
221f	For each weight over 20 lb. or 10 kg but not over 50 lb. or 25 kg - same as 221d.....	4.00
221x	Copies of certificates or reports previously issued or reissue of worn or damaged certificates or reports returned, each.....	.50
221z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 222.- "CLASS A" STANDARD WEIGHTS (NOT NEW)

Effective January 1, 1927, superseding all previous schedules for the items covered.

Note: This schedule applies to standards that have been in use several years, or that have been given the 3 months "age" test for constancy.

Item	Description	Fee
222a	Class A standards (not new): for each set, or single weight, or group that is submitted, tested and certified as a unit, when the largest weight is not over 2 lb. or 1 kg - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	$1.00
222b	Same as 222a except that the largest weight is over 2 lb. or 1 kg but not over 20 lb. or 10 kg....	1.25
222c	Same as 222a except that the largest weight is over 20 lb. or 10 kg but not over 50 lb.or 25 kg...	1.50
	Note: To the appropriate item above there will be added, in the case of a full regular test, an amount computed from one or more of the following items - the item or items used depending on the size of the weights. For weights given the complete inspection, cleaning, etc., but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only the appropriate one of the items above.	
222d	For each weight that is not over 2 lb. or 1 kg - testing for accuracy, sealing, and certifying or reporting of correction for each weight.....	.75
222e	For each weight that is over 2 lb. or 1 kg but not over 20 lb. or 10 kg - same as 222d.....	1.00
222f	For each weight that is over 20 lb. or 10 kg but not over 50 lb. or 25 kg - same as 222d.....	1.75
222x	Copies of certificates or reports previously issued or reissue of worn or damaged certificates or reports returned, each.....	.50
222y	Minimum total charge billed for any test.....	1.00
222z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 223.- "CLASS B" STANDARD WEIGHTS

Effective January 1, 1927, superseding all previous schedules for the items covered.

Item	Description	Fee
223a	Class B Standards: for each set, or single weight, or group that is submitted, tested and certified as a unit, when the largest weight is not over 2 lb. or 1 kg - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	$1.00
223b	Same as 223a except that the largest weight is over 2 lb. or 1 kg but not over 20 lb.or 10 kg.....	1.25
223c	Same as 223a except that the largest weight is over 20 lb. or 10 kg but not over 50 lb.or 25 kg...	1.50

Note: To the appropriate item above there will be added, in the case of a full regular test, an amount computed from one or more of the following items - the item or items used depending on the size of the weights.

For weights given the complete inspection, cleaning, etc. but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only the appropriate one of the items above.

223g	For each weight that is not over 2 lb. or 1 kg - testing for accuracy, sealing, and certifying or reporting whether each weight is correct within the specified tolerance.....	.30
223h	For each weight that is over 2 lb. or 1 kg but not over 20 lb. or 10 kg - same as 223g.....	.40
223i	For each weight that is over 20 lb. or 10 kg but not over 50 lb. or 25 kg - same as 223g.....	.70
223x	Copies of certificates or reports previously issued or reissue of worn or damaged certificates or reports returned, each.....	.50
223y	Minimum total charge billed for any test.....	1.00
223z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 224. - "CLASS C" STANDARD WEIGHTS

Effective January 1, 1927, superseding all previous schedules for the items covered.

Item	Description	Fee
224a	Class C standards: for each set, or single weight, or group that is submitted, tested and certified or reported as a unit, when the largest weight is not over 2 lb. or 1 kg - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	$1.00
224b	Same as 224a except that the largest weight is over 2 lb. or 1 kg but not over 20 lb. or 10 kg...	1.25
224c	Same as 224a except that the largest weight is over 20 lb. or 10 kg but not over 50 lb. or 25 kg..	1.50

Note: To the appropriate item above there will be added, in the case of a full regular test, an amount computed from one or more of the following items - the item or items used depending on the size of the weights.

For weights given the complete inspection, cleaning, etc., but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only the appropriate one of the items above.

224g	For each weight that is not over 2 lb. or 1 kg - testing for accuracy, sealing, and certifying or reporting whether each weight is correct within the specified tolerance.....	.20
224h	For each weight that is over 2 lb. or 1 kg but not over 20 lb. or 10 kg - same as 224g.....	.30
224i	For each weight that is over 20 lb. or 10 kg but not over 50 lb. or 25 kg - same as 224g.....	.50
224x	Copies of certificates or reports previously issued or reissue of worn or damaged certificates or reports returned, each.....	.50
224y	Minimum total charge billed for any test.....	1.00
224z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 225.- "CLASS M" LABORATORY STANDARDS OF MASS

Effective January 1, 1927, superseding all previous schedules for the items covered.

Note: Item b applies to weights which are boiled in distilled water to remove traces of plating salts as completely as possible, and also as a test of the adequacy of the plating. Item a applies to weights which are not given this treatment, particularly to those that are not electroplated or that have been in use for some years.

Item	Description	Fee
225a	Class M standards that are not new or not plated: for each set, or single weight, or group that is submitted, tested and certified or reported as a unit - for regular inspection, cleaning, handling, etc. (but not including test for accuracy.....	$1.00
225b	New plated Class M standards and sets or groups containing such standards: for each set, or single weight, or group of weights that is submitted, tested, and certified or reported as a unit - for regular inspection, cleaning, handling, etc. (but not including test for accuracy.....	2.00

Note: To the appropriate item above there will be added, in the case of a full regular test, an amount computed from one or more of the following items - the item or items used depending on the nature of the test.

For weights given the complete inspection, cleaning, etc. but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only the appropriate one of the items above.

225d	Moderate precision test of each weight - testing accuracy and certifying or reporting of correction for each weight.....	.75
225j	High precision test of each weight - testing accuracy and certifying or reporting of correction for each weight (as a rule this test requires also the determination of the volume of each weight above 1 g. See item v).....	1.00

Test Fee Schedule 225.- "CLASS M" LABORATORY STANDARDS OF MASS(CONT'D)

Item	Description	Fee
225v	For each weight for which the actual volume must be determined - determination of actual volume by hydrostatic weighings.....	$1.50
225w	Reference standards and weights whose constancy over a long period of time must be assured - determination of change that occurs during 3 months under good atmospheric conditions. The fee for this test of constancy with "age" will be equal to (and in addition to) that computed from item d or j.	
225x	Copies of certificates or reports previously issued or reissue of worn out or damaged certificates or reports returned, each	.50
225y	Minimum total charge billed for any test.....	1.00
225z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 226.- "CLASS S" LABORATORY WEIGHTS

Effective January 1, 1927, superseding all previous schedules for the items covered.

Item	Description	Fee
226a	Class S laboratory weights that are "one-piece" weights, or screw knob weights that are not plated or lacquered, or in general, weights that do not need to be given a test for the effect of changes in atmospheric humidity: for each set or single weight, or group that is submitted, tested and certified or reported as a unit - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	$1.00
226b	Plated or lacquered screw knob weights or sets or groups that include such weights; or in general, weights that are tested for the effect of variations in atmospheric humidity: for each set, or single weight, or group that is submitted, tested and certified or reported as a unit - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	3.00

Note: To the appropriate item above there will be added, in the case of a full regular test, an amount computed from either item d or item g depending on the nature of the test.

For weights given the complete inspection, cleaning, etc., but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only the appropriate one of the items above.

226d	Determination of actual value for each weight - testing and certifying or reporting of actual correction for each weight	.75
226g	Tolerance test of each weight - testing and certifying or reporting whether each weight is correct within the specified tolerance.....	.40

Test Fee Schedule 226.- "CLASS S" LABORATORY WEIGHTS (CONT'D)

Item	Description	Fee
226x	Copies of certificates or reports previously issued or reissue of worn or damaged certificates or reports returned, each.....	$ .50
226y	Minimum total charge billed for any test.....	1.00
226z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

Test Fee Schedule 227.- "CLASS S2" LABORATORY WEIGHTS

Effective January 1, 1927, superseding all previous schedules for the items covered.

This schedule covers a new class, including what are often called "second quality analytical weights", "students' sets", and other laboratory weights of similar quality and of accuracy within 5 times the tolerances for weights of Class S.

Item	Description	Fee
227a	Class S2 laboratory weights, for each set or single weight, or group that is submitted, tested and certified or reported as a unit - for regular inspection, cleaning, handling, etc. (but not including test for accuracy).....	$1.00
	Note: To the item above there will be added, in the case of a full regular test, an amount computed from item g. For weights given the complete inspection, cleaning, etc., but not tested for accuracy, on account of defects discovered or for some other cause, the fee is only item a.	
227g	Tolerance test of each weight - testing and certifying or reporting whether each weight is correct within the specified tolerance	.30
227x	Copies of certificates or reports previously issued or reissue of worn or damaged certificates or reports returned, each.....	.50
227y	Minimum total charge billed for any test.....	1.00
227z	For special tests not covered by the above schedule, fees will be charged dependent upon the nature of the test.	